PATENT CLAIMS

1. System for low-interference signal transmission of a signal and particularly of a digital signal from a transmitter to a receiver spatially separate therefrom, which are preferably mobile relative to each other, via a line-bound, a contacting and/or a contact-free transmission circuit, particularly in revolving transmitters,
characterized in that a modulator unit modulates the signal to be transmitted, the carrier signal of the transmitting means in the transmitter or the transmitter output signal at any optional site in the transmission circuit independently of the modulation selected for the purpose of signal transmission, such that the output signal spectrum of the transmitter will be spread and hence the spectral power density of the transmitter output signal will be reduced.

2. System according to Claim 1,
characterized in that the signal to be transmitted, the carrier signal of the transmitting means in the transmitter or the transmitter output signal is modulated at any optional site of the transmission circuit, independently of the transmission cycle, in such a way that the line spectrum of the transmitter output signal will be spread so as to reduce the mean spectral power density by filling the gaps between the individual signal lines.

3. System according to Claim 1 ~~or 2~~,
characterized in that a controller serves to control said modulator unit.

4. System according to ~~any of the~~ Claims 1 ~~to 3~~,
characterized in that the transmitter comprises a clock generator.

5. System according to Claim 4,
characterized in that said modulator unit controls said clock generator appropriately for spreading the line spectrum.

6. System according to Claim 5,
characterized in that said modulator unit subjects the cycle frequency of said clock generator to frequency modulation.

7. System according to Claim 6,
characterized in that said clock generator comprises a VCO as frequency-determining element.

8. System according to Claim 7,
characterized in that said control unit adjusts said VCO.

9. System according to ~~any of the~~ Claims 1 ~~to 8~~,
characterized in that said modulator unit subjects the signal to be transmitted, which is a digital signal in particular, to frequency, phase or amplitude modulation.

10. System according to ~~any of the~~ Claims 1 ~~to 9~~,
characterized in that said modulator unit subjects said carrier signal of the transmitting means in the transmitter or said transmitter output signal at any optional site along the transmission circuit to frequency or phase modulation, respectively, independently of the modulation technique selected for the purpose of signal transmission.

11. System according to ~~any of the~~ Claims 1 ~~to 10~~,
characterized in that in the event of a pulsed carrier signal of the transmitter or a pulsed transmitter output signal a modulator unit shifts or delays, respectively, individual signal edges in proportion to a signal defined by an additionally provided modulation signal generator towards earlier or later points of time.

12. System according to Claim 11,
characterized in that said modulator unit comprises a delay control means for analyzing said transmitter output signal and for controlling a delay circuit which causes said shift or delay, respectively.

13. System according to Claim 12,
characterized in that said delay control means comprises a PLL means and said delay circuit comprises a flip-flop circuit.

14. System according to ~~any of the~~ Claims 1 ~~to 13~~,
characterized in that said transmitter comprises a PLL means.

15. System according to Claim 14,
characterized in that the modulation variation of said modulator unit is covered by the control range of said PLL means of said transmitter.

16. System according to ~~any of the~~ Claims 1 ~~to 15~~,
characterized in that data coding by means of pseudo random noise is performed in addition to the modulation by said modulator unit.

17. System according to ~~any of the~~ Claims 1 ~~to 16~~,
characterized in that a controller is provided in said receiver, which controls the receiver in synchrony with the modulation by said modulator unit in said transmitter or at any optional site of the transmission circuit such that the received signal in said receiver can be processed at least without this additional modulation, with the synchronization between said transmitter or said transmission circuit, respectively, and said receiver being adapted for optional implementation via said modulation signal or even via another signal jointly available for said transmitter or transmission circuit, respectively, and said receiver.

18. System according to ~~any of the~~ Claims 1 ~~to 17~~,
characterized in that an additional transmission circuit is provided between said transmitter or transmission circuit, respectively, and said receiver for the transmission of an additional synchronization signal for controlling the modulation of said transmitter or transmission circuit, respectively, and said receiver.

19. Method of low-interference signal transmission of a signal and a digital signal in particular from a transmitter to a receiver spatially separate therefrom, which are preferably mobile relative to each other, via a line-bound, a contacting and/or a contact-free transmission circuit, particularly in revolving transmitters,
characterized by a modulation of the signal to be transmitted, of the carrier signal of the transmitting means in the transmitter, or the transmitter output signal at any optional site of the transmission circuit, which is performed by a modulation unit independently of the modulation selected for the purpose of signal transmission, for spreading the output signal spectrum of the transmitter and hence for reducing the spectral power density of said transmitter output signal.

20. Method according to Claim 19,
characterized in that the reduction of the mean spectral power density is performed by filling the gaps between the individual signal lines.

21. Method according to Claim 19 ~~or 20~~,
characterized by controlling said modulator unit by means of a controller.

22. Method according to ~~any of the~~ Claims 19 ~~to 21~~,
characterized in that said transmitter comprises a clock generator.

23. Method according to Claim 22
characterized by appropriate controlling of said clock generator by means of said modulator unit for spreading the line spectrum.

24. Method according to Claim 23,
characterized by frequency modulation of the cycle frequency of said clock generator by means of said modulator unit.

25. Method according to Claim 24,
characterized in that said clock generator comprises a VCO as frequency-determining element.

26. Method according to Claim 25,
characterized by the adjustment of said VCO by means of said controller.

27. Method according to ~~any of the~~ Claims 19 ~~to 26,~~
characterized in that said modulator unit subjects the signal to be transmitted, which is a digital signal in particular, to frequency, phase or amplitude modulation.

28. Method according to ~~any of the~~ Claims 19 ~~to 27,~~
characterized in that said modulator unit subjects said carrier signal of the transmitting means of said transmitter or said transmitter output signal at any optional site along the transmission circuit to frequency or phase modulation, respectively, independently of the modulation selected for the purpose of signal transmission.

29. Method according to ~~any of the~~ Claims 19 ~~to 28,~~
characterized in that in the event of a pulsed carrier signal or said transmitter or a pulsed transmitter output signal a modulator unit shifts or delays, respectively, individual signal edges in proportion to a signal defined by an addition-

ally provided modulation signal generator towards earlier or later points of time.

30. Method according to Claim 29,
characterized in that said modulator unit comprises a delay control means for analyzing the transmitter output signal and for controlling a delay circuit, which causes the shift or delay, respectively.

31. Method according to Claim 30,
characterized in that said delay control means comprises a PLL means and said delay circuit comprises a flip-flop circuit.

32. Method according to ~~any of the~~ Claims 19 ~~to 31~~,
characterized in that said transmitter comprises a PLL means.

33. Method according to Claim 32,
characterized in that the modulation variation of said modulator unit is covered by the control range of the PLL means of said transmitter.

34. Method according to ~~any of the~~ Claims 19 ~~to 33~~,
characterized in that data coding is performed by means of pseudo random noise in addition to the modulation by said modulator unit.

35. Method according to ~~any of the~~ Claims 19 ~~to 34~~,
characterized in that a controller is provided in said receiver, which controls the receiver in synchrony with the modulation by said modulator unit in said transmitter or at any optional site along said transmission circuit, such that the received signal in the receiver can be processed at least without this additional modulation, with the synchronization between said transmitter or transmission circuit, respectively, and said receiver can be executed optionally via said modulation signal or even via another signal jointly available for said transmitter or transmission circuit, respectively, and said receiver.

36. Method according to ~~any of the~~ Claims 19 ~~to 35~~,
characterized in that an additional transmission circuit is provided between said transmitter or transmission circuit, respectively, and said receiver, via which an additional synchronization signal is transmitted for controlling the modulation of said transmitter or transmission circuit, respectively, and said receiver.